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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

ROY, SIKHA

ART UNIT

PAPER NUMBER

2879

DATE MAILED: 05/28/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/413,774

Applicant(s)

ITO ET AL.

Examiner

Sikha Roy

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 07 March 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1-84 and 86-122 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) 1-84, 86-100, 102-105, 107-110 and 112 is/are allowed.
- 6) ☐ Claim(s) 101, 106, 111, 113-118 and 120-122 is/are rejected.
- 7) ☐ Claim(s) 119 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1 ☒ Certified copies of the priority documents have been received.
- 2 ☐ Certified copies of the priority documents have been received in Application No. _____
- 3 ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

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DETAILED ACTION

The Amendment, filed on march 7, 2003 has been entered and overcomes the rejection of claims 49-55,93,94 under 35 U.S.C. § 112, first paragraph and claims 49-55,93 and 94 under 35 U.S.C. § 102(b).

New claims 95-122 have been entered.

Claim Objections

Claim 106 is objected to under 37 CFR 1.75 as being a substantial duplicate of claim 101. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 122 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The limitation reciting 'the uneven geometry is

formed by multiplying one cycle of the depression with random cycles of the depressions different from the one cycle' is not disclosed in the specification. The figures 3 and 5 only disclose the surface geometry of the spacer in first embodiment having depressions with multiple cycles.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 101,106,111 and 113-118,120 and 121 are rejected under 35 U.S.C. 102(b) as being anticipated by U. S. Patent 4,181,870 to Stevens.

Referring to claims 101 and 111 Stevens discloses (column 3 lines 13-35,column 5 lines 10-14 Figs. 1 and 3) an electron beam apparatus (color picture tube) comprising a hermetic container (glass funnel) 4 which includes an electron source (electron guns 54,56,58) having electron emission devices and targets (faceplate having phosphors coated inside) exposed to electrons emitted from the source and further comprising first members (wide bead 50) in which pair of widely spaced claws from each of the electrodes 26,28,32,34,36 are embedded. The first member having embedded claws is provided with an uneven geometry at least on a part of its surface and the uneven geometry is arranged at random and in two directions on the surface. The first member (wide glass bead 50) having embedded claws is provided with an uneven geometry at

least on a part of its surface and the uneven geometry constituting amplitudes of two kinds of unevenness.

Claim 106 is duplication of claim 101 and hence is rejected for the same reason.

Referring to claims 113 and 116, the uneven geometry of the first member as disclosed by Stevens inherently comprises plurality of random depressions in two directions of the surface.

Regarding claim 114, the first member (wide glass bead 50) having embedded claws is provided with an uneven geometry at least on a part of its surface and the uneven geometry comprising depressions of varying amplitudes.

Regarding claim 115, the first member with random uneven geometry with varying depressions inherently comprises of various pitches.

Regarding claims 117 and 118 the claws holding the electrodes being embedded in the first member (glass bead 50) constitute a random unevenness and hence will provide random amplitudes or pitches of the uneven geometry.

Claim 120 essentially recites the same limitation as of claim 115 and hence is rejected for the same reason.

Claim 121 essentially recites the same limitation of claim 114 hence is rejected for the same reason

Allowable Subject Matter

Claims 1-84,86-100,102-105,107-110,112 are allowed over the prior art of record.

The following is the examiner's statement of reason for allowance.

Regarding claims 1,43-48, the references of the Prior Art of record fails to teach or suggest the combination of the limitations as set forth in claim 1, and specifically comprising the limitation of an electron beam apparatus having the value of incident angle multiplication coefficient of secondary electron emission coefficient m_0 being equal to or less than 10.

Regarding claims 2-25, claims 2-25 are allowable for the reasons given in claim 1 because of their dependency status from claim 1.

Regarding claims 56-77, claims 56-77 are allowable for the reasons given in claim 43 because of their dependency status from claim 43.

Regarding claim 26, the references of the Prior Art of record fails to teach or suggest the combination of the limitations as set forth in claim 26, and specifically comprising the limitation of an electron beam apparatus having a first member with an uneven geometry and a deposited film on its surface, the thickness of the film being smaller than the top and lowest portions of the uneven geometry.

Regarding claims 78-84 claims 78-84 are allowable for the reasons given in claim 26 because of their dependency status from claim 26.

Regarding claim 27, the references of the Prior Art of record fails to teach or suggest the combination of the limitations as set forth in claim 27. and specifically comprising the limitation of a spacer having the value of incident angle multiplication coefficient of secondary electron emission coefficient m_0 being equal to or less than 10.

Claims 28-42 are allowable for the reasons given in claim 27 because of their dependency status from claim 27.

Regarding claims 49,50 and 51 the references of the Prior Art of record fails to teach or suggest the combination of the limitations as set forth in claims 49 -51, and specifically comprising the limitation of an electron beam apparatus having a first member with an uneven geometry such that the total secondary electron emission generated by irradiating uneven geometry is smaller than the total electron emission generated from irradiating a flat surface.

Claims 52,53 are allowable for the reasons given in claims 49 and 50 because of their dependency status from claims 49 and 50 respectively.

Claims 54 and 55 are allowable for the reasons given in claim 51 because of their dependency status from claim 51.

Regarding claim 91, the prior art of record neither teaches nor suggests an electron beam apparatus with all the claimed limitations particularly the height of the fine unevenness of the spacer-surface having a value in the range $.05\mu\text{m} \leq R_{\text{max}} \leq 10 \mu\text{m}$.

Claims 86-90 and 92 are allowable for the reasons given in claim 91 because of their dependency status from claim 91.

Regarding claims 93-100,102-105,107-112 the references of the Prior Art of record fails to teach or suggest the combination of the limitations as claimed, and specifically comprising the limitation of an electron beam apparatus having a first

member with an uneven geometry such that the total secondary electron emission generated by irradiating uneven geometry is smaller than the total electron emission generated from irradiating a flat surface.

Claim 119 is objected to as being dependent upon a rejected base claims 113-115, but would be allowable if rewritten in independent form including all of the limitations of the base claims.

Regarding claim 119, the references of the Prior Art of record fails to teach or suggest the combination of the limitations as set forth in claim 55, and specifically comprising the limitation of a first member with uneven geometry at least on a part of its surface having roughing film.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

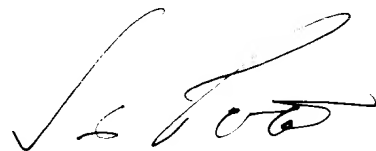
Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sikha Roy whose telephone number is (703) 308-2826. The examiner can normally be reached on Monday-Friday 8:00 a.m. – 4:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar D. Patel can be reached on (703) 305-4794. The fax phone number for the organization is (703) 308-7382.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

S.R.
Sikha Roy
Patent Examiner
Art Unit 2879



VIP PATEL
PRIMARY EXAMINER